

Registration health checks: inverse care in the inner city?

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SUMMARY

Background. Attendance at health checks of patients already registered with a general practitioner is known to be poor, with those in need least likely to attend. Little is known of the efficacy of such checks for newly registered patients.

Aim. This study set out to determine the characteristics of attenders and non-attenders at health checks for patients registering with a general practitioner in east London, and the effect of health checks on motivation to change unhealthy lifestyles.

Method. A questionnaire analysis was carried out of patients aged 16 years and over at registration and after a health check in seven east London training practices. Questionnaires asked about personal background and lifestyle including smoking status, alcohol intake, diet, weight, exercise, cervical smear uptake, and motivation to change unhealthy aspects of lifestyle.

Results. Questionnaires were offered to 356 patients registering with the practices, of whom 101 declined or returned inadequate data. Of the remaining 255 patients, 118 (46%) attended a health check with 113 completing a second questionnaire after the check. Non-attenders were significantly more likely than attenders to be of lower social class, unemployed, of African origin and to be heavy smokers. Women who did not attend were significantly less likely than attenders to have had a cervical smear within the last three years. Non-attending mothers were significantly more likely than attending mothers to be single parents. Motivation among attenders to stop smoking and drink less alcohol was increased significantly after the health check.

Conclusion. Attendance at registration health checks at these practices was poor and non-attenders tended to be more socially deprived than attenders and had relatively unhealthy lifestyles. Although the health checks increased the attenders' motivation to alter smoking and drinking habits, inviting all new patients to a health check would appear to result in poor targeting of health promotion resources and may widen inequalities in health.

Keywords: periodic health examination; new patients; patient compliance; appointment non-attendance; attitude to health.

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Introduction

THE contract for general practitioners in the United Kingdom requires that patients registering with a practice be invited to attend for a health check. The benefits of screening people in this way are controversial. Studies of attendance at health checks among registered patients^{1,2} suggest that Tudor Hart's inverse care law applies;³ only about half of those invited attend and those who do are likely to be of higher social class, to be better educated, and to have fewer risk factors for ill health. Waller and colleagues predicted that attendance at health checks for registering patients would follow a similar pattern.²

A health check is only a first stage in prevention. Large prospective screening programmes have failed to improve patients' health,^{4,5} probably because of ineffective intervention and follow up. However, there is limited evidence that advice given in a health check can alter patients' lifestyles. A number of studies have assessed the success of clinics addressing a single aspect of health. Sanders and colleagues found that 3.6% of the intervention group and 0.9% of controls reported stopping smoking when assessed one year after advice given by nurses, although urinary cotinine levels indicated that around one quarter of these reports may have been deceptions.⁶ Dietary advice in a nurse-run nutrition clinic was associated with modest short term alterations in cholesterol profiles and dietary habits.⁷ Simple advice in an outpatient department encouraged abstinence in 8% of alcoholics.⁸

The aims of this study were to determine whether those who fail to attend health checks for new patients in east London differed from attenders, and whether advice given altered patients' motivation to change unhealthy lifestyles.

Method

During a five week period in 1991, all patients aged 16 years and over registering at seven training practices in east London were offered questionnaires by receptionists when they registered. The number of partners in the seven practices ranged from two to seven (mean four) and the mean list size of the partners was 1884 patients (range 1334-2263). Since the area has a high concentration of Turkish immigrants with a poor command of English, a Turkish translation of the questionnaire was available. The questionnaire, which was to be completed in the practice, covered patients' background and lifestyle, including attitudes to smoking, alcohol, diet, exercise, weight and cervical smears. Patients who admitted to unhealthy aspects of lifestyle were asked to rank on analogue scales from one to 10 to what degree they intended to alter their behaviour. For example, with respect to smoking: 'How much do you feel you would like to cut down?' Rank one 'no intention of stopping smoking' to rank 10 'want to stop smoking at all costs'.

Receptionists invited all newly registering patients to attend a health check and most patients were given an appointment within the next three weeks. Checks were carried out mainly by health promotion nurses and in some cases by doctors. After the health check, the person carrying out the check gave patients a second questionnaire consisting of the same analogue scales, which was to be completed immediately. Patients were asked to rank their intentions once more. Questionnaires were coded to allow pre- and post-health check replies to be matched. To reduce bias,

patients were assured that their answers were anonymous and were not intended to reflect the quality of the health check.

A third questionnaire was given to participating nurses and doctors after the study period to determine the range and depth of topics covered, techniques used to address problem areas, and the amount of time allotted for health checks.

Results were expressed, where appropriate, as medians with 95% non-parametric confidence intervals. Data were analysed on a *Minitab* programme using the chi square, Mann Whitney *U* and Wilcoxon signed rank tests. Tests were one-tailed.

Results

Questionnaires were offered to 356 patients, of whom 101 declined or returned insufficient data. No information was available for this group of 101 patients. Of the remaining 255 patients, 118 patients (46.3%) attended a health check (113 completing the second questionnaire); 137 (53.7%) patients completed the initial questionnaire but failed to attend a check.

Comparison of attenders and non-attenders showed them to be similar in terms of age, sex, and level of further education (Table 1). Non-attenders were significantly more likely than attenders to be of lower social class, unemployed, of African origin (Table 1) and to be heavy smokers (Table 2). Non-attending women were significantly less likely than attenders to have had a cervical smear within the last three years (Table 2); non-attending mothers were significantly more likely to be single parents (Table 1). Attenders (before their health check) and non-attenders were similarly motivated to alter unhealthy aspects of their lifestyles (Table 3).

Smokers who attended for a health check indicated that they were significantly more motivated to cut down following the check than before it (Table 3). Motivation to alter drinking habits was generally low in comparison with other aspects of lifestyle. Attenders who drank alcohol reported having significantly increased motivation to drink less following their check (Table 3) but motivation among heavy drinkers to cut down was unaltered. Those who felt their diet was unhealthy, who took inadequate exercise, or who were overweight showed no increase in motivation to alter these risk factors after the health check (Table 3). Motivation to have regular cervical smears among women was generally high before health checks and continued to be high after the health check (Table 3).

A total of 19 of 39 doctors and nurses responded to the questionnaire about the content of health checks for newly registered patients. All of the doctors and nurses reported covering smoking and alcohol in every check while 95% covered contraception and cervical cytology (in women). Fewer (79%) reported regularly addressing diet, exercise and weight; 53% regularly covered safe sex and breast self examination, and 16% testicular self examination. The time allotted to a check was most commonly 15–24 minutes (68% of respondents), and 37% of health workers covered only one or two topics in detail. Techniques cited as used to deal with problem areas included providing leaflets (79% of respondents), referral within the practice (37%), referral to outside agencies (37%) and recall for further discussion (16%).

Discussion

The results of this study provide further evidence that invitations to health checks given in an unselected way result in poor targeting of preventive health resources, as those in most need are least likely to attend.

There was a response rate of 72% to the initial questionnaire. Nothing is known about the background of the remaining 28% who did not respond or what proportion of them attended a health check, but it seems unlikely that a higher proportion

Table 1. Personal background of attenders and non-attenders at a health check.

| | % of respondents | |
|----------------------------------|--|----------------------------|
| | Attenders (n = 113) | Non-attenders (n = 137) |
| Sex | | |
| Male | 44.2 | 51.1 |
| Female | 55.8 | 48.9 |
| Age (years) | | |
| 16–30 | 65.5 | 55.5 |
| 31–45 | 27.4 | 30.7 |
| 46–60 | 5.3 | 8.8 |
| 61+ | 1.8 | 5.1 |
| Ethnicity | | |
| European | 57.5 | 54.0 |
| African | 6.2 | 16.1 ^a |
| West Indian | 3.5 | 6.6 |
| Turkish | 14.2 | 4.4 |
| Other ^b | 8.0 | 8.8 |
| Not stated | 10.6 | 10.2 |
| | $\chi^2 = 13.3, 4 \text{ df}, P < 0.01$ | |
| Employment | | |
| Employed | 61.9 | 38.0 |
| Unemployed | 19.5 | 27.0 ^c |
| Unclassified ^d | 15.9 | 31.4 |
| Not stated | 2.7 | 3.6 |
| | $\chi^2 = 14.8, 2 \text{ df}, P < 0.001$ | |
| Further education | | |
| Yes | 68.1 | 58.4 |
| No | 29.2 | 37.2 |
| Not stated | 2.7 | 4.4 |
| Social class | | |
| 1 and 2 | 40.7 | 24.8 |
| 3 | 18.6 | 15.3 |
| 4 and 5 | 15.9 | 24.1 |
| 6 unclassified ^d | 22.1 | 32.1 |
| Not stated | 2.7 | 3.6 |
| | $\chi^2 = 6.2, 2 \text{ df}, P < 0.05$ | |
| Women^e | | |
| Without children | 69.8 | 65.2 |
| With children | 30.2 | 34.8 |
| Women parents^f | | |
| Single | 10.5 | 47.8 |
| Married/cohabiting | 89.5 | 52.2 |
| | $\chi^2 = 6.8, 1 \text{ df}, P < 0.05$ | |

n = total number of respondents. df = degrees of freedom ^aEuropean versus African: $\chi^2 = 5.0, 1 \text{ df}, P < 0.05$. ^bAsian, Jewish, South and North American. ^cEmployed versus unemployed: $\chi^2 = 6.4, 1 \text{ df}, P < 0.05$. ^dHousewives, students, retired. ^e63 attenders, 66 non-attenders. ^f19 attenders, 23 non-attenders.

would attend than of those who completed questionnaires. Of the respondents to the first questionnaires 46% attended a health check. This is of the same order as that of recent work on registered patients^{1,2} although other studies on registered patients report rates from 18%⁹ to over 80%.^{10,11} High rates of attendance probably reflect the benefits of repeated verbal and postal invitations to less deprived populations.

One might expect attenders at a health check to be better motivated to alter their lifestyle than non-attenders but this was not found to be the case in this study. The method used here might have been insufficiently sensitive to detect a small difference in motivation between attenders and non-attenders. The results suggest that motivation to change unhealthy lifestyle may be a relatively weak or even irrelevant factor with regard to attendance and that social factors such as social class, race and employment are more powerful determinants of attendance.

Table 2. Lifestyle of attenders and non-attenders at a health check.

| | % of respondents | |
|--------------------------------------|--|----------------------------|
| | Attenders (n = 113) | Non-attenders (n = 137) |
| <i>Smoking</i> | | |
| Non-smokers | 53.1 | 53.3 |
| 1-20 cigarettes per day | 45.1 | 35.8 |
| 21+ cigarettes per day | 1.8 | 10.9 ^a |
| | $\chi^2 = 9.0, 2 \text{ df}, P < 0.05$ | |
| <i>Alcohol</i> | | |
| Teetotal | 23.9 | 33.6 |
| Light drinkers ^b | 66.4 | 54.7 |
| Heavy drinkers ^c | 7.1 | 9.5 |
| Not stated | 2.7 | 2.2 |
| <i>Diet</i> | | |
| Eat a healthy diet | 79.6 | 83.9 |
| Eat an unhealthy diet | 11.5 | 11.7 |
| Not stated | 8.8 | 4.4 |
| <i>Exercise</i> | | |
| Less than twice per week | 62.8 | 63.5 |
| At least twice per week | 33.6 | 28.5 |
| Not stated | 3.5 | 8.0 |
| <i>Weight</i> | | |
| Consider themselves obese | 38.9 | 28.5 |
| Do not consider themselves obese | 56.6 | 69.3 |
| Not stated | 4.4 | 2.2 |
| <i>Cervical cytology^d</i> | | |
| Had smear within 3 years | 66.7 | 49.3 |
| No smear within 3 years | 27.0 | 47.8 |
| Not stated | 6.3 | 3.0 |
| | $\chi^2 = 5.4, 1 \text{ df}, P < 0.05$ | |
| Ever requested a smear | 39.7 | 31.3 |
| Never requested a smear | 50.8 | 62.7 |
| Not stated | 9.5 | 6.0 |

n = total number of respondents. df = degrees of freedom. ^aNon-smokers versus heavy smokers: $\chi^2 = 6.9, 1 \text{ df}, P < 0.01$. ^bWomen 14 units or less, men 21 units or less per week. ^cMore than light drinkers. ^d63 attenders, 67 non-attenders.

Motivation to cut down among smokers and those who drank alcohol was increased by the health check. The latter is surpris-

ing since 90% of drinkers who attended the health check reported drinking within current safe limits. Perhaps advice was given with such zeal that even light drinkers felt they wanted to drink less. Or, patients may have underestimated their alcohol intake so that advice was given to a higher risk group than was apparent from the questionnaire data.

Motivation to alter exercise habits, diet or weight was unchanged. These topics were addressed regularly by 79% of doctors and nurses during a check, but it is possible that poor advice was given in these areas. Motivation among women to have regular cervical smears was strikingly high among both attenders and non-attenders; it would have been difficult for the methods used here to detect an increase in motivation.

Although the study design tried to avoid bias, results from the analogue scores of motivation could have been affected in two ways. First, patients might have skewed their responses to questions on motivation towards socially acceptable answers. Skewed positive responses would reduce the chances of detecting differences between attenders and non-attenders and between attenders before and after their health checks, although patients might skew their responses only in areas that were covered in checks. Secondly, patients might skew their responses in an effort to please the health worker carrying out the health check. If such bias had occurred one would have expected improvements in motivation to have been seen in all areas of lifestyle after the health check. This did not occur, implying that scores were a fair reflection of patients' intentions.

This study did not attempt to show whether patients' lifestyles actually altered. The design could have been strengthened by asking patients how likely they were to attempt to alter lifestyle and how successful they thought they might be. Motivation is, however, a prerequisite for change and it is encouraging to demonstrate that a brief multi-objective health check can significantly increase motivation to change certain aspects of unhealthy lifestyles.

This study confirms that socially deprived people and those with an unhealthy lifestyle are less likely to attend a health check.^{1,2} Marsh and Channing¹² demonstrated that specific targeting could improve uptake of preventive care in deprived areas. Once targeted, attendance at health checks is optimized through repeated verbal and postal invitation.^{10,11} Imaginative schemes such as the use of advocates for ethnic minorities

Table 3. Intention to change unhealthy aspects of lifestyle of non-attenders at a health check and of attenders before and after the check.

| Intention | Median score ^a (95% confidence interval) | | |
|--|---|---------------|----------------|
| | Non-attenders | Attenders | |
| | | Before check | After check |
| To stop smoking (n = 50/45) | 8 (6 to 9) | 7 (5 to 9) | 8.5 (8 to 10)* |
| To drink less alcohol | | | |
| All drinkers (n = 49/47) | 3 (1 to 4) | 2 (1 to 5) | 5 (3 to 6)*** |
| Heavy drinkers ^b (n = 13/7) | 5.5 (1 to 10) | 5 (2 to 9) | 5 (5 to 9) |
| To eat more healthy foods ^c (n = 16/11) | 7.5 (5 to 10) | 9 (7 to 10) | 9 (7 to 10) |
| To take more exercise ^d (n = 74/68) | 8 (7 to 9) | 8 (8 to 9) | 8 (7 to 10) |
| To lose weight ^e (n = 35/37) | 8 (7 to 10) | 8 (5 to 9) | 8 (5 to 10) |
| To have regular smears | | | |
| All women (n = 60/51) | 10 (9 to 10) | 10 (10 to 10) | 10 (10 to 10) |
| Those without smear within 3 years (n = 27/15) | 10 (7 to 10) | 10 (6 to 10) | 10 (6 to 10) |
| Those who had never requested a smear (n = 34/25) | 10 (8 to 10) | 10 (8 to 10) | 10 (7 to 10) |

n = number of non-attenders/attenders (excludes those supplying inadequate information). Wilcoxon signed rank test, attenders before and after check: *P < 0.05, ***P < 0.001. ^aAnalogue scale of 1-10. ^bWomen 15 units or more, men 22 units or more per week. ^cThose who considered their diet unhealthy. ^dThose who exercised less than twice per week. ^eThose who considered themselves obese.

encourage attendance and improve the interpretation of patients' needs and beliefs.¹³ Adequate resources are needed to allow opportunistic health advice when patients with risk factors attend. But these are only first steps; effectively reducing risk factors among those screened depends on careful documentation,^{12,14} with organized intervention and thorough follow up.¹⁵

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